Operating Instructions

Repair Light

> 6149

1 Contents

1 Contents 2
2 General Information 2
3 General Safety Information 3
4 Designated Use 4
5 Technical Data 4
6 Transport, Storage and Disposal 6
7 Assembly 6
8 Installation 7
9 Commissioning 7
10 Maintenance and Servicing 8
11 Accessories and Spare Parts 11
12 Type Examination Certificate (Page 1) 12
13 Declaration of Conformity 13

2 General Information

2.1 Manufacturer

R. STAHL Schaltgeräte GmbH
Kompetenzcenter Licht
Nordstr. 10
D-99427 Weimar
Telephone: +49 3643 4324
Fax: +49 3643 4221-76
E-Mail: info.leuchten@stahl.de
Internet: www.stahl.de

R. STAHL Schaltgeräte GmbH
Am Bahnhof 30
D-74638 Waldenburg
Telephone: +49 7942 943-0
Fax: +49 7942 943-4333
Internet: www.stahl.de

2.2 Information about the Operating Instructions

ID NO.: 614960300010
Publication Code: S-BA-6149-01-en-06/07/2007

We reserve the right to make technical changes without notice.

2.3 Symbols used

▶	A call to take action: Describes the actions which the user should undertake.
▷	Reaction sign: Describes the results or the reactions to the actions taken.
✗	Checklist sign
☞	Commentary sign: Describes the notes and recommendations.
	Warning sign: Danger from energised parts!
	Warning sign: Danger due to an explosive atmosphere!

3 General Safety Information

3.1 Safety Instructions for Assembly and Operating Personnel

The operating instructions contain basic safety instructions which are to be observed during operation and maintenance. Non-observance can result in a hazard to persons, plant and environment.

⚠ WARNING
Risk due to unauthorised work being performed on the light! ▷ There is a risk of injury and damage to equipment. ▶ Assembly, installation, commissioning, operation and maintenance must only be performed by authorised personnel who have been trained to do so.

Before connection/operating:

- ▶ Read through the operating instructions.
- ▶ Give adequate training to the assembly and operating personnel.
- ▶ Ensure that the contents of the operating instructions are fully understood by the personnel in charge.
- ▶ The national installation and assembly regulations (e.g. IEC/EN 60079-14) apply.

If you have questions:

- ▶ Contact the manufacturer.

When operating the lights:

- ▶ Ensure the operating instructions are made available on location at all times.
- ▶ Observe safety instructions.
- ▶ Observe national safety and accident prevention regulations.
- ▶ Only run the light according to its performance data.
- ▶ Servicing/maintenance work or repairs which are not described in the operating instructions must not be performed without prior agreement with the manufacturer.
- ▶ Any damage may render explosion protection null and void.
- ▶ No changes to the lights impairing their explosion protection are permitted.
- ▶ The device may only be fitted and used if it is in an undamaged, dry and clean state.

3.2 Warning Information

Warnings are sub-divided in these operating instructions according to the following scheme:

⚠ WARNING
The type and source of the danger! ▷ Possible consequences. ▶ Measures for avoiding the danger.

They are always identified by the signalling word “WARNING“ and sometimes also have a symbol which is specific to the danger involved.

3.3 Conformity to Standards

The repair light complies with the following directives and standards:

- ✗ Directive 94/9/EC
- ✗ IEC/EN 60079-0, IEC/EN 60079-1, IEC/EN 60079-17, IEC/EN 61241-0, IEC/EN 61241-1
- ✗ IEC/EN 60598-1, IEC/EN 60598-2-8, EN 55015, EN 61547

4 Designated Use

The repair light 6149 is designed for use as a portable workplace light for explosion hazard areas in zones 1, 2, 21 and 22.

The optional mounting brackets allow the repair light to also be used as a machine light.

⚠ WARNING

Only use the light for its intended purpose!

- ▷ The manufacturer's liability and rights to make claims under warranty will be invalidated otherwise.
- ▶ Only use the light under the operating conditions described in the operating instructions.
- ▶ The light must only be used in explosion hazardous areas according to these operating instructions.

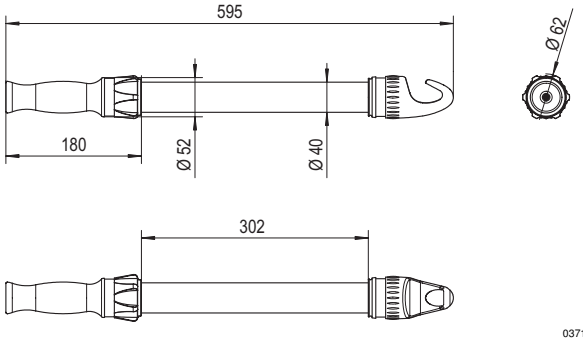
5 Technical Data

Version	**6149/1-.1 (2-lamps)**		**6149/1-.2 (4-lamps)**	
Explosion protection				
Gas explosion protection	Ⓔx II 2G Ex d IIC T4		Ⓔx II 2G Ex d IIC T4	
Dust explosion protection	Ⓔx II 2 D Ex tD A21 IP 6X $T_{O\,max}$ * * surface temperatures see selection table		Ⓔx II 2 D Ex tD A21 IP 6X $T_{O\,max}$ * * surface temperatures see selection table	
Certificates	PTB 07 ATEX 1009 IECEx PTB 07.0018		PTB 07 ATEX 1009 IECEx PTB 07.0018	
Rated working voltage	12 V / 24 V / 110 - 230 V AC ± 10 %; 50/60 Hz 12 V / 24 V DC ± 10 %		12 V / 24 V / 110 - 230 V AC ± 10 %; 50/60 Hz 12 V / 24 V DC ± 10 %	
Rated current	12 V AC	0.6 A	12 V AC	1.2 A
	24 V AC	0.3 A	24 V AC	0.6 A
	12 V DC	0.7 A		
	24 V DC	0.35 A		
	110 - 254 V AC	0.037 A		
Ambient temperature range	- 20 °C ... + 50 °C		- 20 °C ... + 40 °C	
Lamps	2 x CCFL 320 mm, cold cathode lamps		4 x CCFL 320 mm, cold cathode lamps	
Light intensity	130 lux in 1 m distance		205 lux in 1 m distance	
Luminous flux	approx. 400 lm		approx. 800 lm	
Degree of protection	IP 66/67		IP 66/67	
Protection class	II		II	
Material				
Seals	NBR		NBR	
Enclosure pipe	Polycarbonate		Polycarbonate	
Rubber handle	NBR/PVC (EPDM)		NBR/PVC (EPDM)	
Suspension hook	NBR/PVC (EPDM)		NBR/PVC (EPDM)	

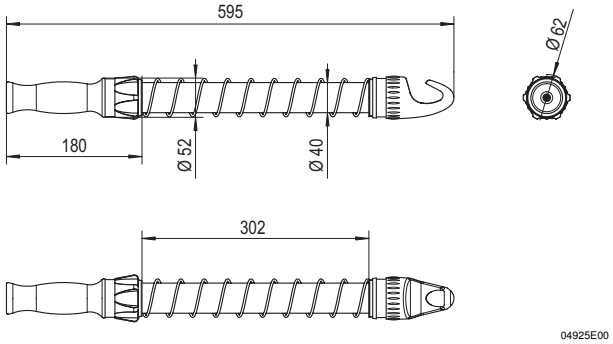
Connection cable	Standard:	Connection cable, 5 m, Type H07RN-F, ∅ 7.7 ... 10 mm, 2 x 1 mm^2	Standard:	Connection cable, 5 m, Type H07RN-F, ∅ 7.7 ... 10 mm, 2 x 1 mm^2
	Optional:	Gifas Thermoflex cable, 5 m, Type HXSLHXÖ-J, ∅ 7.7 ... 10 mm, 2 x 1.5 mm^2 Helukabel with steel wire screening, Type SY-JZ, 2 x 1,5 mm^2	Optional:	Gifas Thermoflex cable, 5 m, Type HXSLHXÖ-J, ∅ 7.7 ... 10 mm, 2 x 1.5 mm^2 Helukabel with steel wire screening, Type SY-JZ, 2 x 1,5 mm^2
Cable entries	Standard:	A2F, M 20 x 1.5 ∅ 6.1 mm ... 11.7 mm	Standard:	A2F, M 20 x 1.5 ∅ 6.1 mm ... 11.7 mm
	Optional:	8163/2-20s-E1FXZ-M20, M20 x 1.5	Optional:	8163/2-20s-E1FXZ-M20, M20 x 1.5

Version	**Rated voltage**	**Temperature classification at T_a =**		**$T_{O\ max.}$ at T_a = 40 °C**	**Ordering Code**	**Weight**
						kg
Repair Light 6149, 2-lamps	12 V AC; 50/60 Hz	T4	T4	105 °C	6149/1-111-1200	1,120
	12 V DC	T4	T4	115 °C	6149/1-211-1200	1,115
	24 V AC; 50/60 Hz	T4	T4	105 °C	6149/1-311-1200	1,120
	24 V DC	T4	T4	115 °C	6149/1-411-1200	1,115
	110-230 V AC; 50/60 Hz	T4	T4	110 °C	6149/1-511-1200	1,155
Repair Light 6149, 4-lamps	12 V AC; 50/60 Hz	T4	--	105 °C	6149/1-121-1200	1,155
	24 V AC; 50/60 Hz	T4	--	105 °C	6149/1-321-1200	1,155
	110-230 V AC; 50/60 Hz	T4	--	120 °C	6149/1-521-1200	1,200

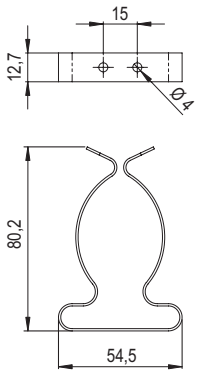
Dimension drawings (all dimensions in mm) - subject to alterations



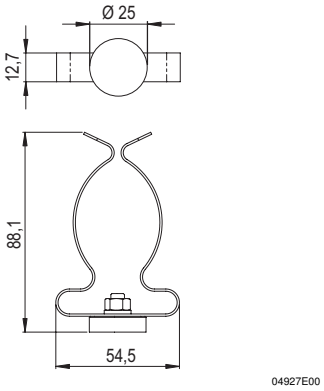
Repair Light without wire guard



Repair Light with wire guard



Mounting bracket



Mounting bracket with magnet

6 Transport, Storage and Disposal

Transport

▶ Shock-free in its original carton, do not drop, handle carefully.

Storage

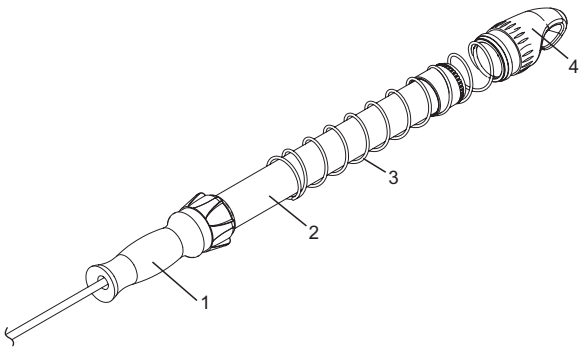
▶ Store in a dry place in its original packing.

Disposal

▶ Ensure environmentally friendly disposal of all components according to legal regulations.

7 Assembly

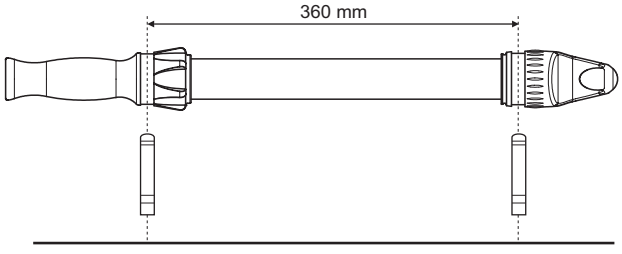
7.1 Fitting the wire guard



05337E00

▶ Remove the suspension hook (4) from the enclosure pipe (2).
▶ Push the wire guard (3) over the enclosure pipe.
▶ Push the first coil of the wire guard over the lip of the grip (1).
▶ Push the suspension hook back onto the enclosure pipe and push the last coil of the wire guard over the lip of the suspension hook when doing so.
▷ The wire guard is now fitted.

7.2 Wall mounting



05342E00

▶ Fix the mounting brackets to the wall at a spacing distance of 360 mm.
▶ Clip the inspection light into the mounting brackets.
▷ Wall mounting is complete.

8 Installation

WARNING	
	Using plugs of the incorrect explosion protection category or plugs which are not explosion protected! ▷ If plugs of the incorrect explosion protection category or plugs which are not explosion protected are used, explosion protection is not guaranteed. ▶ Only use plugs, which are approved for use in the relevant zone.

☞	Plugs 8570/12-304, 8570/12-306, 8575/12-100 and 8575/12-110 (see "11. Accessories and Spare Parts") manufactured by R. Stahl Schaltgeräte fulfill the requirements for explosion protection.

▶ Fit plugs in accordance with the manufacturer's instructions.

9 Commissioning

Before commissioning

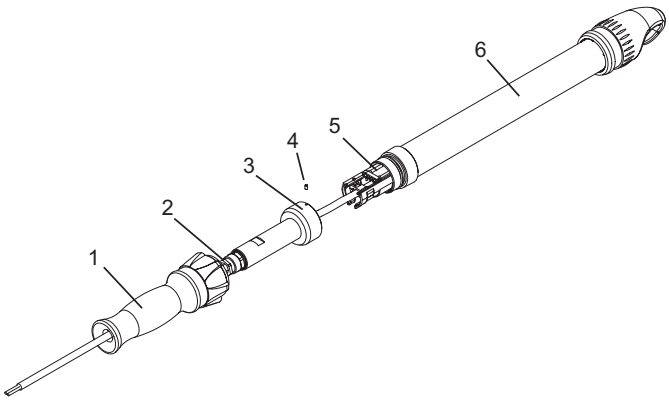
▶ Make sure that the plug is fitted correctly and that it is approved for use in the zone in question.
▶ Check that cable is clamped properly.
▶ Inspect the cable gland for damage.

10 Maintenance and Servicing

⚠WARNING	
	Danger from energised parts! ▷ Risk of the serious injury. ▶ Disconnect the light from the power supply before carrying out maintenance work.

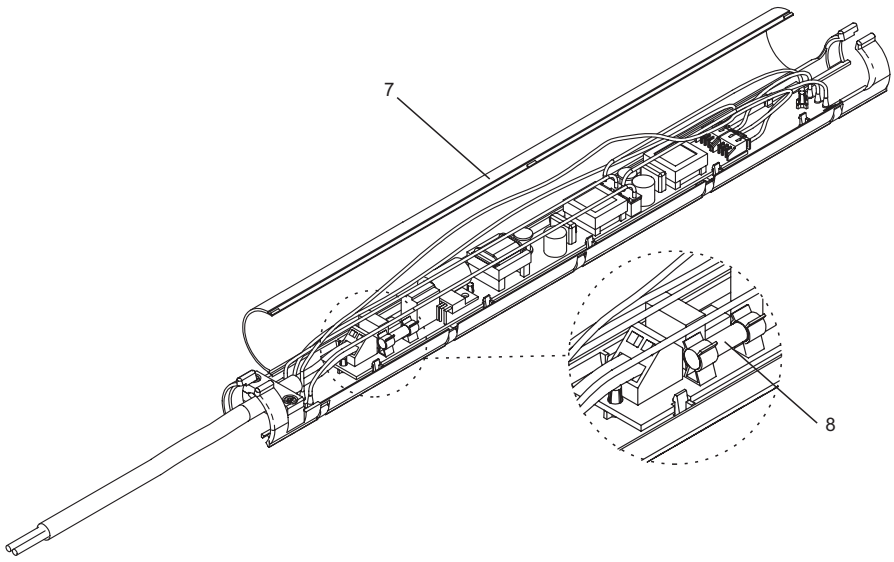
10.1 Replacing the fuse

⚠WARNING
Danger of breakage! ▷ The lamp can break when work is carried out on the lamp holder. ▶ Carefully pull the lamp holder out of the pipe. ▶ Carefully place the lamp holder, lamp down, onto a firm, even surface.



05341E00

▶ Remove the rubber grip (1) from the grip end (3).
▶ Open the cable clamp (2).
▶ Remove the securing screw (4) and screw the grip end off.
▶ Carefully pull the lamp holder (5) out of the pipe (6) and place it lamp down onto a firm, even surface.

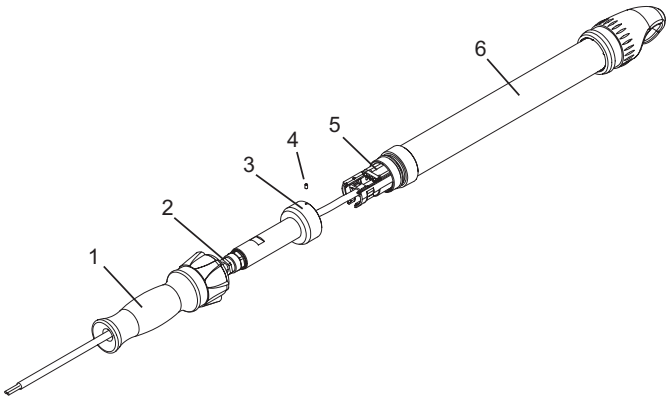


05340E00

- ▶ Open the cover (7).
- ▶ Replace the fuse (8) with a new fuse of the same rating.
- ▶ Replace the lamp holder and close the repair light in the reverse sequence.

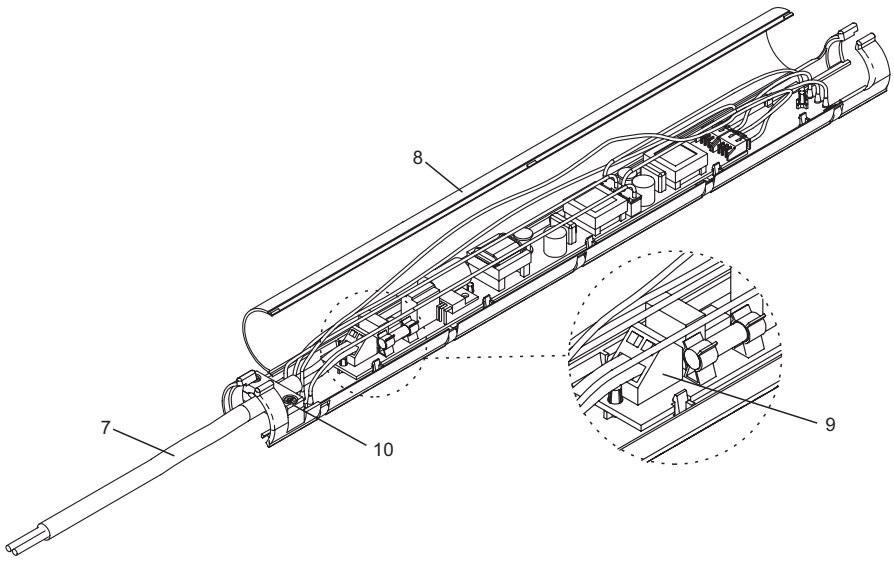
10.2 Replacing the lamp holder

⚠ WARNING
Danger of breakage! ▷ The lamp can break when work is carried out on the lamp holder. ▶ Carefully pull the lamp holder out of the pipe. ▶ Carefully place the lamp holder, lamp down, onto a firm, even surface.



05341E00

- ▶ Remove the rubber grip (1) from the grip end (3).
- ▶ Open the cable clamp (2).
- ▶ Remove the securing screw (4) and screw the grip end off.
- ▶ Carefully pull the lamp holder (5) out of the pipe (6) and place it lamp down onto a firm, even surface.



05338E00

- ▶ Open the cover (8).
- ▶ Loosen the strain-relief screws (4).
- ▶ Open the spring clamp terminals (3) using a screwdriver and disconnect the conductors.
- ▶ Connect a new connection cable to the spring clamp terminals.
- ▶ Tighten the strain relief screws.
- ▶ Replace the lamp holder and close the repair light in the reverse sequence.

10.3 Regular Maintenance Work

- ▶ Consult the relevant regulations (e.g.IEC/EN 60079-17) to determine the type and extent of inspections.
- ▶ Plan the intervals so that any defects of the light which may be anticipated are promptly detected.

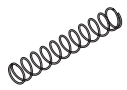
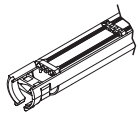
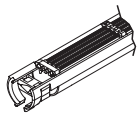
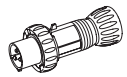
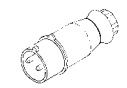
To check as part of the servicing/maintenance schedule:

- ✗ Check the connection cable for damage.
- ✗ Inspect light for visible damage.
- ✗ Leak-tightness of the cable glands.
- ✗ Compliance with the permitted temperatures in accordance with EN 60079-0.
- ✗ Make sure the function is in accordance with regulations.

10.4 Cleaning

- ✗ Clean with a damp cloth, brush, vacuum cleaner or similar items.
- ✗ When cleaning with a damp cloth use water or mild, non-abrasive, non-scratching cleaning agents.
- ✗ Never use aggressive cleaning agents or solvents.

11 Accessories and Spare Parts

Designation	Illustration	Description	Ordering code	Weight kg
Mounting bracket	04880E00	Mounting bracket of galvanized sheet steel	614980980010	0,023
Mounting bracket and magnet	04885E00	Mounting bracket of galvanized sheet steel and magnet	614980980020	0,050
Wire guard	 04888E00	External wire guard for additional mechanical protection	614990140010	0,200
Lamp holder with lamps, 2-lamps	 04889E00	for 6149/1-11-200 (12 V AC; 50/60 Hz)	614980740010	0,095
		for 6149/1-21-200 (12 V DC)	614980740020	0,090
		for 6149/1-31-200 (24 V AC; 50/60 Hz)	614980740030	0,095
		for 6149/1-41-200 (24 V DC)	614980740040	0,090
		for 6149/1-51-200 (110-230 V AC; 50/60 Hz)	614980740050	0,130
Lamp holder with lamps, 4-lamps	 04890E00	for 6149/1-12-200 (12 V AC; 50/60 Hz)	614980740060	
		for 6149/1-32-200 (24 V AC; 50/60 Hz)	614980740080	
		for 6149/1-52-200 (110-230 V AC; 50/60 Hz)	614980740100	0,175
Plug	 04923E00	8570/12-304 3 pins, 100 - 130 V, 50/60 Hz, 16 A	8570025090	0,310
		8570/12-306 3 pins, 200 - 250 V, 50/60 Hz, 16 A	8570020090	
	 04922E00	8575/12-100 2 pins, 20 - 25 V, 16 A	8575032090	0,200
		8575/12-110 2 pins, 20 - 25 V DC, 16 A	8575033090	

12 Type Examination Certificate (Page 1)

Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

(1) **EC-TYPE-EXAMINATION CERTIFICATE**

(Translation)

(2) Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres - **Directive 94/9/EC**

(3) EC-type-examination Certificate Number:

PTB 07 ATEX 1009

(4) Equipment: Repair light, type 6149/.

(5) Manufacturer: R. STAHL Schaltgeräte GmbH

(6) Address: Am Bahnhof 30, 74638 Waldenburg, Germany

(7) This equipment and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

(8) The Physikalisch-Technische Bundesanstalt, notified body No. 0102 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, given in Annex II to the Directive.

The examination and test results are recorded in the confidential report PTB Ex 07-16194.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 60079-0:2004 **EN 60079-1:2004** **EN 61241-0:2006**
EN 61241-1:2004

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

(11) This EC-type-examination Certificate relates only to the design, examination and tests of the specified equipment in accordance to the Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.

(12) The marking of the equipment shall include the following:

Ex II 2 G Ex d IIC T4

Ex II 2 D Ex tD A21 IP6x T 105 °C to 120 °C

Zertifizierungsstelle Explosionsschutz
By order:

Dr.-Ing. M. Theden
Oberregierungsrat

Braunschweig, April 27, 2007

sheet 1/3

EC-type-examination Certificates without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt.
In case of dispute, the German text shall prevail.

Physikalisch-Technische Bundesanstalt • Bundesallee 100 • D-38116 Braunschweig

13 Declaration of Conformity

EG-Konformitätserklärung
EC-Declaration of Conformity
CE-Déclaration de Conformité

Wir *(we; nous)*

R. STAHL Schaltgeräte GmbH, Am Bahnhof 30, 74638 Waldenburg, Germany

6149/..-..

erklären in alleiniger Verantwortung, dass das Produkt
hereby declare in our sole responsibility, that the product
déclarons de notre seule responsabilité, que le produit

Reparaturleuchte
Repair light
Baladeuse

mit der *(under; avec)*
EG-Baumusterprüfbescheinigung:
EC-Type Examination Certificate:
Attestation d'examen CE de type:

PTB 07 ATEX 1009

auf das sich diese Erklärung bezieht, mit den folgenden Normen oder normativen Dokumenten übereinstimmt
which is the subject of this declaration, is in conformity with the following standards or normative documents
auquel cette déclaration se rapporte, est conforme aux normes ou aux documents normatifs suivants

Bestimmungen der Richtlinie *terms of the directive* *prescription de la directive*	**Nummer sowie Ausgabedatum der Norm** *Number and date of issue of the standard* *Numéro ainsi que date d'émission des normes*
94/9/EG: ATEX-Richtlinie *94/9/EC: ATEX Directive* *94/9/CE: Directive ATEX*	EN 60079-0:2004 EN 60079-1:2004 EN 61241-0:2006 EN 61241-0:2006 DIN EN 60598-1:2005 DIN EN 60598-2-8:2001
89/336/EWG: EMV-Richtlinie *89/336/EEC: EMC Directive* *89/336/CEE: Directive CEM*	DIN EN 55015:2003 DIN EN 61547:2001

Qualitätssicherung Produktion:
Production Quality Assessment:
Assurance Qualitée Production:
PTB 96 ATEX Q006-4

Kenn-Nr. der benannten Stelle / *Notified Body number / N° de l'organisme de certification:* 0102

Waldenburg, 29.06.2007
Ort und Datum
Place and date
lieu et date

i.V.
B. Limbacher
Leiter Entwicklung
Head of Development
Directeur Développement

i.V.
Dr. S. Jung
Leiter Qualitätsmanagement
Director Quality Management Dept.
Directeur Dept. Assurance de Qualité

ALB 5/2002-d

614960300010
S-BA-6149-01-en-06/07/2007